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Costs and Antecedents of Hog Price Instability: Is There a Better Way?

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Few ideas have so captured the fancy of western man as the idea that prices, rather than man, can regulate the economy. That's what a market economy is all about -- impersonal regulation of economic activity through the mechanism of prices rather than personal control by those with vested authority.

Inherent in a market economy is price variation and instability. After all, it is the change in price that signals to consumers when to buy more or less of something or to switch to something else, and to producers when to produce more or less of something or another thing. The impersonal market system won't work unless we have price changes, and that means price variation. Everyone associated with the swine industry knows about price variations. But, the questions that beg answering are, do we have too much price variation in the swine industry, and if so, what can we do about it?

Let me share some observations relevant to the first question. We do have substantial price variation in the swine industry, and it's getting greater rather than moderating. We calculated a mathematical value, called the coefficient of variation, which measures the variation in prices over

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time around the point of central tendency. Over the past two decades, the variation in hog prices has been half again as large as has been the case for cattle prices. That is, hog prices vary 50 percent more than do cattle prices: hog prices vary an average of 43 percent from their trend line compared to 29 percent for cattle prices. Furthermore, hog price variation almost tripled in the 1966-76 period compared to the 1955-65 period. That is, price variations for hogs increased by almost 300 percent during this time, compared to less than a 30 percent increase for cattle.

Additionally, hog prices tend to be below their central tendency trend line more often than above. When hog prices are adjusted for the impact of inflation, the annual average price falls below the long-run average price six out of ten years. That is, prices are below trend line 60 percent of the time, and above just 40 percent. By like token, when prices are below trend line, their variation from trend line is less than their variation above. Thus, there is significant price variation in the swine industry, it is increasing in magnitude, and prices tend to be lower more often than higher.

But, what does this mean to producers? I calculated the total return to hog producers in the U.S. from 1961 through 1975 in terms of constant value, 1972 dollars. This totaled about $82 billion for the 15 year period. I then calculated what the total revenue would have been in that same period, again based upon 1972 dollars, if in each year the price received had been equal to the average price over the entire 15 years. That is, with no price variation. This totaled to about $83 billion. This means that U.S. hog producers have lost about $1 billion in revenue since 1960 due to price instability compared to stable trend line prices. Wow, that sounds like a gigantic economic injustice for hog producers! But, let's put it

in perspective. There were about 1.3 billion hogs marketed by farmers during those 15 years. Thus, the loss due to unstable prices was about 75 cents per head, or roughly 30 cents per hundredweight.

With this as background, permit me to comment on what can be done about price instability in the swine industry. Instability begins when some disruption causes disequilibrium in a market, that is, disrupts the balance between supply and demand. In the swine industry, things like a precipitous jump in corn prices, an outbreak of disease, or a price freeze on meat bring on price disequilibrium. Once such a disruption occurs in a market, whether prices become unstable or tend to return to a stable condition depends upon how consumers and producers react to the change in price. These responses or reactions to price changes are what economists call elasticities, that is, the amount that producers and consumers stretch or shrink their production or purchases due to a change in price.

Put simply, when farmers change the quantity they produce more than consumers change the quantity they purchase due to a given price change, market prices tend to become volatile or unstable, and fluctuate widely. Contrariwise, when farmers change their output less than consumers change their purchases, prices tend toward a more stable equilibrium. Again economists have a 50 cent term for this; we call it the Cobweb Theorum.

Numerous studies have shown that, in the swine industry, producers respond more to a change in price than do consumers. Typically over any 2-3 year period, a 10 percent change in price will cause producers to change their output by about 12.5 percent in the same direction. That is, a price increase brings a production increase and vise versa. But consumers change their purchases by only about 8 percent for a 10 percent price change (in the

opposite direction). Thus, if some distortion causes price to increase 10 percent, farmers expand 12 percent or more while consumers cut-back about 8 percent. This creates a surplus on the market which causes prices to fall by more than 10 percent, which in turn causes producers to cut output by more than 12.5 percent while consumers are expanding use from an 8 percent base. A large market deficit results, causing prices to jump more than they fell earlier, and so goes the cycle. As a result, in the absence of some change outside of the market pressures of supply and demand, prices under these conditions will tend toward disequilibrium and increasing instability.

The point: hog prices are inherently unstable, given the nature of supply and demand. Thus, to maintain stability in this industry, some control or influence must be effectuated on the market aside from the normal pressures of supply and demand. In the past, much of this has come about by alternately driving large numbers of producers out of the industry and large numbers of consumers to other foods. There must be a better way! And there is. Both supply and demand management can be used to change the supply/demand relationship, and thus help achieve stability.

The big question is "how to do it?" Demand management is clearly difficult for producers to achieve, notwithstanding promotion and advertising programs. But supply management can be achieved through various forms of mandatory or quasi-mandatory group action such as market orders, exclusive marketing and bargaining associations, market boards or government edict. And, such supply management can be used to generate stability. The dairy industry has done so with the market orders, egg and grape producers are making progress through exclusive marketing and bargaining associations, and wheat and corn growers have done it in the past through government price

support/production control programs. It can be done in the swine industry. But, is there sufficient incentive in 30 cents per hundredweight to do it? For the big, commercial producer with the financial resources to weather the down cycles, I doubt it. For those who drop through the slots, it may be another tune.